

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: October 1, 2001, 19:02:48 ; Search time 97.54 Seconds
(without alignments)
576.779 Million cell updates/sec

Title: US-09-446-677B-2

Perfect score: 4782

Sequence: 1 MKTSPWLVSSVLAFLSCHL.....MELRGSSRNVDVGTGLRF 928

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 412676 seqs, 60623988 residues

Total number of hits satisfying chosen parameters: 412676

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

A_Geneseq_0601.*
1: /SIDS1/gcgdata/geneseq/geneseq/AA1980.DAT.*
2: /SIDS1/gcgdata/geneseq/geneseq/AA1981.DAT.*
3: /SIDS1/gcgdata/geneseq/geneseq/AA1982.DAT.*
4: /SIDS1/gcgdata/geneseq/geneseq/AA1983.DAT.*
5: /SIDS1/gcgdata/geneseq/geneseq/AA1984.DAT.*
6: /SIDS1/gcgdata/geneseq/geneseq/AA1985.DAT.*
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9: /SIDS1/gcgdata/geneseq/geneseq/AA1988.DAT.*
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21: /SIDS1/gcgdata/geneseq/geneseq/AA2000.DAT.*
22: /SIDS1/gcgdata/geneseq/geneseq/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	4782	100.0	928	AAW88417	Chlamydia pneumoni
2	4782	100.0	928	AAAY90237	Chlamydia antigen
3	4774	99.8	949	AAAY35060	Chlamydia pneumoni
4	1862	38.9	918	AAAY69369	Amino acid sequenc
5	1855	38.8	928	AAAY94327	Chlamydia pneumoni
6	1853	38.7	928	AAW88421	Chlamydia pneumoni
7	1836	38.4	918	AAW88422	Chlamydia pneumoni
8	1793	37.5	928	AAW88423	Chlamydia pneumoni
9	1787	37.4	928	AAAY90239	Chlamydia antigen
10	1785	37.3	928	AAW88418	Chlamydia pneumoni
11	1763	36.9	930	AAAY35052	Chlamydia pneumoni

12	1758.5	36.8	927	20	AAAY35054	Chlamydia pneumoni
13	1757	36.7	928	21	AAAY90237	Chlamydia antigen
14	1755	36.7	930	20	AAW88424	Chlamydia pneumoni
15	1755	36.7	930	21	AAAY90240	Chlamydia antigen
16	1734	36.3	936	21	AAAY98429	Chlamydia pneumoni
17	1732	36.2	914	20	AAW88429	Chlamydia pneumoni
18	1705	35.7	925	21	AAAY9843	Chlamydia pneumoni
19	1685	35.2	885	21	AAAY90238	Mature Chlamydia a
20	1634.5	34.2	945	21	AAAY69368	Amino acid sequenc
21	1621.5	33.9	945	21	AAW88428	Chlamydia pneumoni
22	1432.5	30.0	841	21	AAAY92818	C. pneumoniae CPN1
23	1429.5	29.9	841	20	AAW88420	Chlamydia pneumoni
24	1348	28.2	922	21	AAAY95548	Chlamydia pneumoni
25	1345	28.1	922	20	AAAY34597	Chlamydia pneumoni
26	1344	28.1	922	20	AAW88419	Chlamydia pneumoni
27	1286	26.9	643	20	AAAY35056	Chlamydia pneumoni
28	1278.5	26.7	973	21	AAAY96274	Chlamydia POM91B
29	1132.5	23.7	597	20	AAAY34611	Chlamydia pneumoni
30	1130.5	23.6	671	20	AAAY35050	Chlamydia pneumoni
31	1092.5	22.8	1013	20	AAAY16737	C. trachomatis B s
32	1090	22.8	1012	20	AAAY16735	C. trachomatis LGV
33	1089.5	22.8	1013	20	AAAY16738	C. trachomatis F s
34	1080.5	22.6	1006	21	AAAB13639	C. trachomatis pmp
35	1069.5	22.4	982	21	AAAB13633	C. trachomatis pmp
36	1015.5	21.2	1132	20	AAAY35048	Chlamydia pneumoni
37	995	20.8	507	20	AAAY34614	Chlamydia pneumoni
38	882	18.4	610	20	AAW88431	Chlamydia pneumoni
39	850	17.8	880	21	AAAB13632	C. trachomatis pmp
40	843.5	17.6	494	20	AAAY34615	Chlamydia pneumoni
41	842	17.6	866	21	AAAB13638	C. trachomatis pmp
42	831.5	17.4	427	20	AAAY34613	Chlamydia pneumoni
43	827	17.3	483	20	AAAY34609	Chlamydia pneumoni
44	785	16.4	450	20	AAAY34617	Chlamydia pneumoni
45	779.5	16.3	530	20	AAAY35064	Chlamydia pneumoni

ALIGNMENTS

RESULT 1

AAW88417

ID AAW88417 standard; Protein; 928 AA.

AC AAW88417;

XX 26-APR-1999 (first entry)

DE Chlamydia pneumoniae surface exposed protein Omp4.

KW Omp4; outer membrane protein 4; surface exposed protein; antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.

XX Chlamydia pneumoniae.

OS WO9858953-A2.

PN 30-DEC-1998.

XX 19-JUN-1998; 98WO-DK00266.

XX 23-JUN-1997; 97DK-0000744.

XX (BIRK/) BIRKELUND S.

XX (CHRI/) CHRISTIANSEN G.

PI Birkelund S, Christiansen G, Knudsen K, Madsen A;

PI Mygind P;

DR WPI; 1999-105610/09.

DR N-FSDB; AAX06816.

XX Species-specific test for identifying mammals infected with Chlamydia pneumoniae - comprises detecting antibodies specific for

PT outer membrane proteins of *C. pneumoniae* or nucleic acids encoding
PT these proteins

PS Claim 7: Page 40-42: 115pp: English.

This polypeptide comprises the novel 98.9 kDa surface exposed protein Omp4 of the human respiratory pathogen *Chlamydia pneumoniae*. Its amino acid sequence was deduced from DNA (see AAX06816) isolated from a *C. pneumoniae* expression library. The invention provides 12 novel surface exposed proteins, Omp4-Omp15 (see AAX88417-28), and nucleic acid sequences encoding them (see AAX06816-27). A new species specific test is claimed that is used to identify mammals (including humans) infected with *Chlamydia pneumoniae*. The test comprises detecting antibodies specific for Omp4-Omp15 or detecting nucleic acid fragments encoding these outer membrane proteins, especially by PCR. The proteins are also used in the diagnosis of *C. pneumoniae* infection in mammals. The nucleic acids and proteins can also be used in the immunization of mammals, the nucleic acids being particularly useful as DNA vaccines for effecting *in vivo* expression of antigens. The vaccines may also prevent atherosclerosis and bronchial asthma, which are possibly associated with *C. pneumoniae*.

Sequence	928 AA;
SQ	

Query Match	100.0%	Score 4782;	DB 20;	Length 928;
Best Local Similarity	100.0%;	Pred. No. 0;		
Matches 928;	Conservative	0;	Mismatches	0;
			Indels	0;
			Gaps	0;

1	QY	1	MKYSIPWLVSSVLAIFSCHLQSLANBELLSPDDSFNGNIDSGTFPPKTSATYISLUGDVF	60
1	Db	1	mksipwlvssvvlafschlqlslaneellspddsfngnidsgftfpktsatysltgdrv	60
61	QY	61	FYEPGKGTPLUSDSCFKQJTDNLTFELGNHSLTFGRFDAGTHAGAASTTANKNLTFSGPS	120
61	Db	61	fypgkgtpldsdcfkqjtdnlfcflgnhsltfgrfdagthagaastcanknltfsgfs	120
121	QY	121	LLSFDSPSTVTVTGGCTUSSAGGVNLENIRKLWVAGNFSTADGGAIKGASFLLTGTSGD	180
121	Db	121	llsfdspstvtvtggctussaggvnlenirklwvagnfstadggaikgasfllltgtsgd	180
181	QY	181	ALFSNNSSSTKGAIAATTAGARANTGYVRFLSNLTASTSGAIDDEGTSIILNNKFLFY	240
181	Db	181	alfsnssstkgaiaattagarannntyvrflsnltsagaiddegtsiilnnkflfy	240
241	QY	241	EGNAAKTGGAICNTRKASGSPELIIISNNKTLIFASNVAETSGATHAKKLAISSGGTFEF	300
241	Db	241	egnaaktggaicntrkasgspeiliisnnktilifasnvaetsgathakklaiassgftfe	300
301	QY	301	LRNNVSATPKGGAISIDASGELUSLAECTNITFVNTLTITGGSTDPKRNAINTGSNGK	360
301	Db	301	lrnnvsatpkggaaisidasgelslaectnityvntltitggstdtpkrnaintgsngk	360
361	QY	361	FTELRAAKNHTIFYDPJITSEGNSSDVLKINNGSAGALNPYOGTILFSGETITADELKYA	420
361	Db	361	fteleaaknhtifydpjitsegnssdvlkinngsagalnpyogtilfsgetitadelkya	420
421	QY	421	DNLSKSTQPVLSLGGKLLLOKQVTLTESTFSQEAGSLGMDSGTTLSTAGSITITNLG	480
421	Db	421	dnlskstqpvlslsgkllllokvltlesfsqeagsligmdsgtllstagsititnlg	480
481	QY	481	INVDSLGLKQPVSLTAKGASNKVIVSGKLNLLIDIEGNIYESHMFSDQLFSLLLKTVDAD	540
481	Db	481	invdslglkqpvsltakgasnkvivsgklnlldiegniyeshmfshdqlfslllktvdad	540
541	QY	541	VDRNVDISLLIPVPAEDPNSEXGFGQWNVNNTDTATNTKATATWTKTGVPVSPERKS	600
541	Db	541	vdnvdissllipvpaedpnseygfgqwnvnttdtatntkeatatwtktgfvpsperks	600
601	QY	601	ALVCNTLWGVFTDIRSLQOLVEIGATGMBEHKQGFVWSSMTNFLHKHTGDBENRKGFRHTSGG	660
601	Db	601	alvcntlwafvftdirslqlveiqatamekhqafvysmtnflhktgdenrkqfrhtsgq	660

Qy	661	YVIGGSAHTPKDDLLFTFAFCHLFPARDKDCFIANNSTYGGTLPFKHSHTLQPONTLRIG	720
Dd	661	yviggsahtpkddllftfafchlfpardkdciannstyyggtlffkhshtlqpnylrig	720
Qy	721	RAKFSESAIEKFPREIPLADLVQVSFSHSDNRMETHYTLSPESGSWSNECTAGGTGLDL	780
Dd	721	rakfsesaiekfpreipladlvqvsfshsdnrmethytlspesegswsnectiaggldl	780
Qy	781	PFLVLSNPHLPKFTPIPMQVMEMYVSONSFSSDGRGESIGRLNLNSIPVGAKFVQG	840
Dd	781	pflvlsnpHPfkftipmqvmemyvsonsfssdgRgfsgllnlslpvgakfvqgd	840
Qy	841	IGDSYTYDLGSGFFSYDYVRNNPQSTATLVMSPDSPDKTRGNLSRQAFLRGGSNNYYNSN	900
Dd	841	IgdSytydlSgffsydyvrnnpdgstatlvmspdskirggnlsrqafllrgsnmyynsn	900
Qy	901	CELFGHYAMELRGSSRNYNVDVGTKLRF	928
Dd	901	celfghyamElrgssrnynvdvtklrf	928

RESULT

RESOL
AA90236

ID AAY90236 standard; Protein; 928 AA.

AA AAY90236;

DT 29-AUG-2000 (first entry)

XX
DE
Chlamydia antigen CPN100634.

XX Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW therapy; upper respiratory tract disease; bronchitis; sinusitis;
XX Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW therapy; upper respiratory tract disease; bronchitis; sinusitis;

OS Chlamydia pneumoniae.

PN WO200032794-A2.

08-JUN-2000.

AA
PF 01-DEC-1999: 99WO-CA01147.

XX
PR 01-DEC-1998: 98JUS-0110339

PR 01-DEC-1998: 98US-0110427
PR 01-DEC-1998: 98US-0110430

PR 01-DEC-1998; 98US-0110428.
PR 01-DEC-1998; 98US-0110438.

XX
PA (CONN-) CONNAUGHT LAB LTD[illegible][illegible]

DR N-PSDB; AAA30847, AAA30848.

PT Nucleic acids encoding polyp.

PT pneumonia, bronchitis, sinus

XX

XX
XX

The nucleic acids (and their complementary sequences) may be used as diagnostic agents for detecting the presence of nucleic acids encoding Chlamydia antigens according to standard methods, and therefore, for diagnosing Chlamydia infections. For example, they may be used as primers and probes for diagnostic polymerase chain reaction (PCR) assays. Antisense sequences may be used to down regulate expression of the proteins and may be used to treat infections. The nucleic acids may also be used to produce the protein antigens. They

CC encode according to standard recombinant DNA methodologies. The
CC proteins may then be used as antigens for the production of antibodies
CC (i.e. as vaccines) for preventing infection by Chlamydia. The
CC antibodies may also be used as diagnostic reagents for detecting
CC infections. Chlamydia is a pathogen implicated in the development of
CC (for example) community acquired pneumonia, upper respiratory tract
CC disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC adult-onset asthma and acute exacerbations of asthma in adults.
XX
SQ Sequence 928 AA;

Query Match 100.0%; Score 4782; DB 21; Length 928;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 928; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKTSLPWLVSSVLAFLSCHLQSLANEELLSPDDSPNGNIDSGTFTPKTSATYSITGDFV 60
Db 1 mktslpwlvssvlfafschlqlaneellspddsfngnidsgtftpktsattysitgdvf 60
Qy 61 FYEPCKGTPLSDCSCFKQTTDNLTLFLNGCHSLTFGIDAGTHAGAASTANKNLTFSGFS 120
Db 61 fyepkgtpldscscfkqtdnltflngchsltfgidagthagaaastanknltsfgs 120
Qy 121 LLSFSDSPSTVTGQGTLSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLLTGTSGD 180
Db 121 llsfdspsstvtgqgtlssaggvnlenirkllvvagnfstadggaikgasfllltsgtd 180
Qy 181 ALFNNSSSTKGAIAITAGARIANNNGYVFLSNIASTSGAIDDEGTSILSNKKFLYF 240
Db 181 alfnnssstkgaiattagariannngyvfllsniaastsgaiddegtsilsnkkflyf 240
Qy 241 EGNAAKTGGACHTKASGSPPELLISNNKTLIFASNAETSGGAIHAKKLLASSGGTFEF 300
Db 241 egnaaktggacntkasgspellissnnktilfasnaetsgggaihakllalssggftfe 300
Qy 301 LRNVSSATPKGGAISIDASGELSIAETGNITFVRNLTFTTGTGTDTPKRNAINIGSNGK 360
Db 301 lrnvssatpkggaidsaegelsiaetgnitfvrnltfttgtgtdtpkrnainignsgk 360
Qy 361 FTELRAAKNHTIFFYDPTTSSTGSSDVLKINNGSAGALNPYQGTILFSGETLTADLKA 420
Db 361 ftelraaknhtiffydpitstgssdvlkinngsagalnpyggtillfsgeltadelkva 420
Qy 421 DNLKSSFTQPSVLSGKLLKQVGTLESTFSQAGSLGMDSGTTLSTAGSTITNLG 480
Db 421 dnlkssftqpsvlsggkllkqvgtlestsfsqagsllgmdsgtllstagsittnlg 480
Qy 481 INVDSLGLKQPVSLTAKGASNKVTVSGKLNLDIEGNIYESHMFSDQLFSLKITVDAD 540
Db 481 invdslglkqpvsltakgasknvivsgklhldiegniyeshmfshdqlfslkitvdad 540
Qy 541 VDTNVDISLIPVPAEDPNSYFGQGVNWNWTTDTATNTKEATATWTKTGFPSPERKS 600
Db 541 vdtnvdislipvpaedpnsyfggvnwnwtttdatntkeatatwtktgfvsperks 600
Qy 601 ALVNTLWGVFTDIRSLQQLVEIGATGMEHKQGVWSSMTNFKHTGDNKGRFHRISGG 660
Db 601 alvntlwgvftdirslqqlveigatgmehkqgvwssmtnflkhtgdenkgrfhrtsgg 660
Qy 661 YVIGSHTPKDDLTFACFLHFRDKCFIAHNSRTYGGTFLFKHSHTLPQNYLRIG 720
Db 661 yvigsshtpkddlftfchlfarddcfiahnstrtyggtlffkhshtlpqnylrig 720
Qy 721 RAKFESAIEKFPREIPALDVQVFSHSDNRMETHTYSLPESGWSNECIAGGIGL 780
Db 721 rakfesaiekfpreipaladvqvfshsdnrmethytslpesegswsneciaggigldl 780
Qy 781 PFVLSNPHLPKFTIPQMKVEMVTVSQNSPFESSDGRGFSIGRLNLNLSIPVGAKFVGD 840
Db 781 pfvlsnphlpkftipqmkvemvvsqnsfessdgrgfsigrllnlslpvgakfvgd 840
Qy 841 IGDSTYVDLSFFVSDVYVRNPNQSTATIVMSPDSSWKIRGGNLSRQAFLLRGSNNVYNSN 900

Db 841 igdstyvdlsffvsvdyvyrnnpqstativmspdswkgrgnlsrqafllrgsnnyvynsn 900
Qy 901 CELFGHYAMELRGSSRNYNVDVGKLR 928
Db 901 celfghyameilrgssrnynvndvgtklrf 928
RESULT 3
AAY35060
ID AAY35060 standard; Protein: 949 AA.
XX AAY35060;
XX AC
XX XX
XX 13-SEP-1999 (first entry)
XX
XX Chlamydia pneumoniae cellular envelope protein.
XX DE
XX Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis;
XX KW sinusitis; purulent otitis media; erythema nodosum; pharyngitis;
XX KW vaccine; neutralising epitope.
XX OS Chlamydia pneumoniae.
XX XX
XX W09927105-A2.
XX PN
XX 03-JUN-1999.
XX PD
XX XX
XX 20-NOV-1998; 98WO-IB01890.
XX PF
XX 04-NOV-1998; 98US-0107078.
XX PR
XX 21-NOV-1997; 97FR-0014673.
XX XX
XX (GEST) GENSET.
XX PA
XX Griffais R;
XX PI
XX WPI; 1999-357842/30.
XX DR
XX
XX Genome sequence of Chlamydia pneumoniae
XX PT
XX Page 947-949; Disclosure; 1912pp; English.
XX PS
XX AAY34584-Y35879 represent the proteins encoded by all the open reading
XX CC frames in the complete genome (see AAX91990) of Chlamydia pneumoniae.
XX CC C. pneumoniae causes respiratory disease such as pneumonia and
XX CC bronchitis and is thought to be a contributing factor in heart
XX CC disease, sarcoidosis, sinusitis, purulent otitis media, erythema
XX CC nodosum or pharyngitis. The polypeptides encoded by the open reading
XX CC frames of the C. pneumoniae genome (see AAY34584-Y35879) can be used in
XX CC immunogenic compositions as vaccines. Vectors containing C. pneumoniae
XX CC nucleotide sequences can also be used as immunogenic compositions,
XX CC especially where the vector directs the expression of a neutralising
XX CC epitope of C. pneumoniae.
XX SQ Sequence 949 AA;

Query Match 99.8%; Score 4774; DB 20; Length 949;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 927; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MKTSLPWLVSSVLAFLSCHLQSLANEELLSPDDSPNGNIDSGTFTPKTSATYSITGDFV 60
Db 22 mktslpwlvssvlfafschlqlaneellspddsfngnidsgtftpktsattysitgdvf 81
Qy 61 FYEPCKGTPLSDCSCFKQTTDNLTLFLNGCHSLTFGIDAGTHAGAASTANKNLTFSGFS 120
Db 82 fyepkgtpldscscfkqtdnltflngchsltfgidagthagaaastanknltsfgs 141
Qy 121 LLSFSDSPSTVTGQGTLSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLLTGTSGD 180
Db 142 llsfdspsstvtgqgtlssaggvnlenirkllvvagnfstadggaikgasfllltsgtd 201

Qy	181	ALFNNSSSTKGGAIATTAGARIANNNGYVRFPLSNIASTSSGGAIDDEGTSILSNKNFLXF	240
Db	202	alfnnssstkgaiaattagarannntgxvrflnlastsggaalddegtsilsnknflxf	261
Qy	241	EGNAAKTTGAICNTKASGSPELLIISNNKTLIFASNVAETSGAIHAKKIALLSGGFTFF	300
Db	262	egnaakttgai cntk asgsPELLIISnnkTLIFasnvaetsggai hAKKIALlsGGftff	321
Qy	301	LRNNVSATPKGGAISIDASGELSAAETGNIFVRNTLTGTSTDPKRNAINIGSNCK	360
Db	322	lrnnvsatpkga isid asGELSaaetgnIFvrntLTgtstDPkRNAInIGsnck	381
Qy	361	FTELRAAKNHTIFYDPITSEGTSDDVLKINNGSAGALNPYQGTILFSGETLTADELKYA	420
Db	382	ftelraaknhtiffydpitsegtsddvlkinngsagalnpyggtilfsgetltadelkya	441
Qy	421	DNLKSSFTQPSVLSGGKLLIQKVLTLESFSFOAESLIGMDSGTTLSITTAGSITITNLG	480
Db	442	dnlkssftqpsvlsGGKlllQkvLTlesfsfoaeslIGmdsgttLSITtagSITitnlG	501
Qy	481	INVDSLGKOPVSLTAKGASNKYIVSGKLNLDIEGNIYESHMFSDQLFSLIKITVDAD	540
Db	502	invdsglkopvsltaKgaSNkyivsgkLnldieGniYEShmfSDqlfSLIKITvdad	561
Qy	541	VDTNVDISSLIPVPAEDPNSEYCFQGWNNWNMTDTATNKEATATWTKTFVPSPERKS	600
Db	562	vdtnvdissliPvpaedpnseycfQgwnwnMTDTATnKEATATwTKtfVPSPerks	621
Qy	601	ALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWYSSMTNFLHKTGDNRKGFRTSGG	660
Db	622	alvcntlgwftdirslqqlveigatgmeHkgfWYssmtnflhktgdnrkGfRtsgg	681
Qy	661	YVIGGSAHTPKDDLFPFAPCHLFAKDQCFIAHNNSRTYGGTLFPKHSTLOPQNYLRIG	720
Db	682	yviggsahtpkddlftfapchlfARkdCfIahnsrTYggTLfPKhsTLopqnylriG	741
Qy	721	RAKFSESAIEKFPREIPLADVOVSFSDSNRNMETHYTSLPESGWSWNECLAGGILDL	780
Db	742	rakfsesaiekfpreiPladvoVSfSDsnrmethYtsLPesegswsneclaggilDL	801
Qy	781	PFVLSNPHLPKFTFIPQMKVEMYVVSQNSFFESSSDGRGFSTGRLLNLSTIPVCAKFVQGD	840
Db	802	pfvlsnphlpkftfipQmkvemyvvsqnsffESSsdGRGFstGRllNLstIPvCAkfVqgd	861
Qy	841	IGDSYTYDLSGFVSDYVRNPNPOSTATLVNSPDWSKIRGNGLSRQAFLLRGSNNVYNSN	900
Db	862	igdsytydlsgfvsdYvrnpnpstAtlvnsPDwSkIRgngLSrQAFllRGSnnvYnsn	921
Qy	901	CELFEGHYAMELRSSRNYNVDGTKLRF	928
Db	922	celfeghyamelrgssrnnynvDGtklrf	949

RESULT 4
AAY69369

ID AAY69369 standard; Protein; 918 AA.

XX
XX

AC AAY69369;

XX
DT 19-JUN-2000 (first entry)

DT 19-JUN-2000 (first entry)
XX

DE Amino acid sequence of the CPN10039

[illegible]

KW CPN100395; chlamydia infection; immu
XX

XX
QS
Chlamydia pneumoniae.

XX	20-AUG-1998;	98US-0097187.	
PR	20-AUG-1998;	98US-0097188.	
PR	20-AUG-1998;	98US-0097189.	
PR	20-AUG-1998;	98US-0097190.	
PR	20-AUG-1998;	98US-0097195.	
PR	20-AUG-1998;	98US-0097196.	
PR	20-AUG-1998;	98US-0097197.	
PR	27-AUG-1998;	98US-0097191.	
PR	17-AUG-1999;	99US-0376770.	
XX	(CONN-) CONNAUGHT LAB LTD.		
PA	Murdin AD, Oomen RP;		
XX	WPI; 2000-224703/19.		
PI	N-PSDB; AAZ61509.		
XX	Novel antigens and corresponding DNA molecules that can be used to		
PT	prevent, treat and diagnose disease caused by Chlamydia infection in		
ET	mammals, especially humans -		
PT	Claim 19; Fig 15-E; 20lpp; English.		
XX	AAV69362-69 represent Chlamydia pneumoniae polypeptides. The		
XX	polypeptides are present in the bacterial membrane structure, in the		
CC	external vicinity of the membrane structure, in the inclusion membrane		
CC	structure, in the external vicinity of the inclusion membrane structure		
CC	and in the cytoplasm of the infected cell. The polypeptides may be		
CC	used to prevent, treat and detect the presence of Chlamydia infection		
CC	and/or the presence of Chlamydia in a sample. The polypeptides may		
CC	also be used to induce an immune response in a mammal. The vaccine		
CC	vector comprising the polynucleotides is used to induce an immune		
CC	response in a mammal. Antibodies directed against the polypeptides		
CC	may also be used therapeutically to treat and/or prevent a Chlamydia		
CC	infection.		

Query Match
38.9%; Score 1862; DB 21; Length 918;

Best Local Similarity 42.3%; Pred. No. 3.3e-117;

Matches 398; Conservative 156; Mismatches 352; Indels 34

Qy	1	MKTSIPWLVSSVLAIFSCHLQSL---	ANEELLSPDDSFNGNIDSGTTPPK----	TSATT52
Db	1	mrsefslilssslafpl-lmsvsadaaditlgsrdsyngdttstetfpaaktsdaagtt	59	
Qy	53	YSLRGDVFYEPGKGPLSDSCFKQTTDNLTFLGNHSLTFGFDIAGTGAHAAASTTANK	112	
Db	60	yilgdvvisagqkqtslttscfsentagnltfigngfsllhfdniisstvagvvvsntaas	119	
Qy	113	NLT-FSGFSLLSFDSPSTVTTVTCQGLSSAGGVNLENIRKLVVAGNFSTADGGAIKGAS	171	
Db	120	gitkfsgfstlrmlaapr---tigkgaiktdglvfesignldlnenassengaintkt	176	
Qy	172	PLRGTSGDALFSSNSSTVKGGAATTAGARIANNCTGYRFLSNIASTSGAIDDEGTSI	231	
Db	177	lslcgstrfvafignssggggaiaysgdvisenagilsgfnnsattsgaiaegnlv	236	
Qy	232	LSNNKFLYFEGNAAKTTGGAICNTKASGSEP--LIISNNKTLIFASVARTSGATHAKK	289	
Db	237	isnnqniffigdckattngaldcnkaganpdpaltisgneslhlntagnsgaiaiytkk	296	
Qy	290	LALSSG-GTFEFLNNVSSATPKGGAISIDAAGELSLSAETGNITFVRNLTFTTGTSDTP	348	
Db	297	lvissrggvlfnssnkaanatkpggaialdsgeisadignlfigentttstgspav	356	
Qy	349	KRNAINTSGKGFTELRAAKNHHTFFDYDDTITSGTSDVLKINNGSAGALNPYOGTILFS	408	
Db	357	trnaidlasnakflnlnratgnkvifdypttsq-atcklslnkadagsgntyegyivfs	415	
Qy	409	GETITADELKVADNLKSSFTQPVVSLGGKLLQKGVLTSTFSFQKAGSLGLMGDSGTTLS	468	

416 gekiseelkpdnlkfttaqvelaagalvkdgvttantitqvegskvmdaggtfe 475
 469 TTAGSITITNIGINVDISLGLKQPVSLLAKGASNKVIVSGKLNLDIEGNIYESHMSHQ 528
 476 asaegvtlglainidsldgtknalkataaskdvalsgpmlvdagnyyehhnlsgq 535
 529 LFSLLKTVADVDVTNVDISSLIPVPAEDPNSEYFGOGWNNVNTTDTATNTKEATATWT 588
 536 vfllelsaggtm-ttdltpd---tpltntnhygggnwnlvvwddataktkntltwt 591
 589 KTFVSPERKSALVNCNTLWGVFTDIRSLQOLVEIGATGMEHKQGFVWSSNFTLHKGTG 648
 592 ktgypkperqgplvpnslgsvfdrsiqlmdrstsslnlsvsgiadflhedqk 651
 649 ENRKGFRHTSGGYVIGGSAHTPKDDLTTFAPCHLPARDKDCFIHNNSTRYGGTLFKHS 708
 652 gnqrsyrhssagyal99gfftasenfnafcqlfygdkhlvaknhthvyagamsyrh- 710
 709 HTLQPNQVYLRGKRAKSESATEKPPREIPLALDVQVSFSDNRMETHYTSLPESEGSWS 768
 711 -----lgesktlakisgnsdslpfnarfayghcdnmmttkytpsvkgsww 760
 769 NECIAGGIGLDLPVLSNPHPLFTFIPQMKVEMVYVSQNSFFESSDGRGFSIGRLNL 828
 761 ndafgiecgaipvvasgrsswvthtqfInlemyahqndfkengtegrsfqsedlfnl 820
 829 SIPGAKFVQGDIGDSTYDLSGFVSDVYRNPNQSTATLWSPDQSKIRGNLSROAFL 888
 821 avpvgikfek--fsdkstydisiayvpdvirndpgcttllmvsgdswstcgtslsrqall 878
 889 LRGSNNVYNSNCLEFHYAMELRGSSRNYNVDVGTKLRF 928
 879 vragnhafasnfefsqfevelrgssrsyaidl9grgff 918
 RESULT 5
 AAY94327
 ID AAY94327 standard; Protein; 928 AA.
 XX
 AC AAY94327;
 XX
 DT 11-AUG-2000 (first entry)
 XX
 DE Chlamydia pneumoniae 98kD putative outer membrane protein.
 XX
 KW Chlamydia; antigen; vaccine; infection; outer membrane protein.
 XX
 OS Chlamydia pneumoniae.
 XX
 PN W0200026237-A2.
 XX
 PD 11-MAY-2000.
 XX
 PF 29-OCT-1999; 99WO-GB03579.
 XX
 PR 29-OCT-1998; 98US-0106070.
 PR 01-MAR-1999; 99US-0122066.
 PR 27-OCT-1999; 99US-0428122.
 XX
 XX (CONN-) CONNAUGHT LAB LTD.
 XX
 PI Murdin AD, Oomen RP, Dunn PL;
 XX WPI; 2000-365569/31.
 DR N-PSDB; AAA27021.
 XX
 XX Novel Chlamydia 98 kDa putative outer membrane protein antigen, used
 PT for vaccination and protection against Chlamydia infection -
 XX
 PS Claim 6; Fig 1; 93pp; English.
 XX
 XX The present sequence is the 98kDa putative outer membrane protein from

CC Chlamydia pneumoniae. The genomic sequence was amplified using two
 CC PCR primers. The 5' primer contains a NotI restriction site, a ribosome
 CC binding site, an initiation codon and a sequence close to the 3' end of
 CC the 98kDa putative outer membrane protein coding sequence. The 3' primer
 CC contains the sequence encoding the C-terminal sequence of the putative
 CC outer membrane protein and a BsrCI restriction site. The stop codon was
 CC excluded and an additional nucleotide was inserted to obtain an in-frame
 CC C-terminal fusion with the Histidine tag. The PCR product was cloned
 CC into a eukaryotic expression vector (pCA-Myc-His) by restricting both
 CC the vector and the PCR product with NotI and BamHI and performing a
 CC ligation reaction. This expression vector was injected intramuscularly
 CC and intranasally into mice, which were subsequently inoculated with
 CC Chlamydia pneumoniae. The chlamydial lung titers of the immunised mice
 CC were lower than those of the controls. Thus the 98kDa putative outer
 CC membrane protein can be used as a vaccine to provide protection against
 CC Chlamydia infections, especially Chlamydia pneumoniae infections.
 CC The present polypeptide may also be administered orally to treat
 CC Chlamydia infection.
 XX
 SQ Sequence 928 AA;

Query Match 38.8%; Score 1855; DB 21; Length 928;
 Best Local Similarity 42.7%; Pred. No. 9.8e-117;
 Matches 405; Conservative 171; Mismatches 331; Indels 42; Gaps 20;
 QY 1 MKTSIPWLVSSVLAFLSCHLQSLANEELLSPDDSFNGNIDSGTTPKTS-----ATTYSLT 56
 DB 1 mkssfpkfvtfaifp--lsmiatetvldssasfdgn-kngnfsvresqedagttylfk 57
 QY 57 GDVFFYE-PGKGTPLSDSCFKQTTDLNLTFLGNHSLFDFGFDAGTHAGAAA-SYTTANKN 114
 DB 58 gnvlenipgtgtaitkscfntkgdiftngnslfqtvdagtvagaavssvvdkst 117
 QY 115 TFGSGLLSFDSPSTVTVTGQGTLS-SAGVNLNLRKLVVAGNFSPADGGAIKGASFL 173
 DB 118 tfigfsslfiaspgsittkgavscstgslstknvllfksknfstddngaltaktls 177
 QY 174 LTGSGDALFSNNSSTKGAIAITAGARIANNVYVRFSLNIASTSGGATDDEGTSTLS 233
 DB 178 ltgtmaalfsentskkggaigtaldaltitngdgevfsdntssdgaalfteasvtls 237
 QY 234 NKFLEYF-----EGNAAKTT----GGAICNTKASGPSPLIISNNKTLIFASNVAETSGGA 284
 DB 238 nnakvsfidnkvtgasssttdgmsgggaicayktstdtkvtitngmlfnsntttagga 297
 QY 285 IHAKKALSSGGFTFLRNNSVSSAT-PKGGAISIDASGELSLSAETGNITVFRNTLTGTG 343
 DB 298 iyykklelasggltlfrsnvnggtapkggaialedsgelesadsadgdivfgtvtst- 356
 QY 344 STDTPKRNAINIGSNGKFTELRAAKNHTIFYDDIT--SEGTSSDVLKINNGSAGALNPY 401
 DB 357 -tpqtnrssidlgtksakmlrtaagrayfydpttgsstvttdvkvnetpadsalqy 415
 QY 402 QGTILFSGETLTADLVADNLKSSFTOPVSLSGKLLLOKGVLTLESTFSQEAAGSLGM 461
 DB 416 tgnliffgeklseteaaadsknltskllqpcvlsqgtisllkhgvtlqtafqgadsrlem 475
 QY 462 DSGTTLSTTAGSITITNLGINVDISLGLKQPVSLLAKGASNKVIVSGKLNLDIEGNIYES 521
 DB 476 dvgttle-padtstinnlvinnissidgakkakietkatsknltsgttilldptgtfeyn 534
 QY 522 HMFSDQLFSLKLTVDADVDTNVDISSLIPVPAEDPNSEYFGOGWNNVNTTDTATNT 580
 DB 535 hslrnpqsydillelkasgtvts----tavtpdpmekfhygggtgwpivwgtgastt- 589
 QY 581 KEATATKTGTGVPSPERKSALVNCNTLWGVFTDIRSLQOLVEIGATGMEHKQGFVWSSMT 640
 DB 590 --afnvtktgypnperigslvpnslnwafidsslhymetanegilqgdrafcwsgls 647
 QY 641 NFLHKTGDKENKGRFHTSGGYVIGGSAHTPKDDLTTFAPCHLPARDKDCFIHNNSTRY 700
 DB 648 nffhkdstktrgrfhrhsggyvignhntcsdkilsaafcqlfgrdrdyfvakngqvyg 707

DR N-PSDB; AAA30851, AAA30852.

XX Nucleic acids encoding polypeptide antigens from Chlamydia useful for
PT preventing, diagnosing and treating diseases such as community acquired
PT pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
PT asthma -

XX Claim 16; Fig 5; 174pp; English.

XX This sequence is a Chlamydia antigen of the invention, designated
CC CPN100638. The nucleic acids (and their complementary sequences) may be
CC used as diagnostic agents for detecting the presence of nucleic acids
CC encoding Chlamydia antigens in samples according to standard methods,
CC and therefore, for diagnosing Chlamydia infections. For example, they may
CC be used as primers and probes for diagnostic polymerase chain reaction
CC (PCR) assays. Antisense sequences may be used to down regulate
CC expression of the proteins and may be used to treat infections. The
CC nucleic acids may also be used to produce the protein antigens they
CC encode according to standard recombinant DNA methodologies. The
CC proteins may then be used as antigens for the production of antibodies
CC (i.e. as vaccines) for preventing infection by Chlamydia. The
CC antibodies may also be used as diagnostic reagents for detecting
CC infections. Chlamydia is a pathogen implicated in the development of
CC (for example) community acquired pneumonia, upper respiratory tract
CC disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC adult-onset asthma and acute exacerbations of asthma in adults.

XX Sequence 928 AA;

Query Match 37.4%; Score 1787; DB 21; Length 928;
Best Local Similarity 42.7%; Pred. No. 3.8e-112;
Matches 404; Conservative 151; Mismatches 354; Indels 38; Gaps 17;

QY 1 MKTSIPWLVSSVLAFLSCHIQ----SIANELLSPPDSFMNGIDSGTFTP-----KTSAT 51
Db 1 mkslhwllssslalplslnfafaavveinlqptnsfsg---pgtytpaqttnadgt 57
QY 52 TYSITGDVFFYEPKGPPLSDSCFKQTDNLTLFLNGHSLTFFGIDAGTAGAASITAN 111
Db 58 lnyltgdvstnagsgptalcascfketnlsfgghyqfllnqidaganc-tftncaan 116
QY 112 KNITFSGLLSLSDSPSTVTVTGQGTLSAGGVNLENIRKLVVAGNFADGGAIRKAS 171
Db 117 kllsfsgfyslsl--iqtnatgtgaikstgacsigcnyscyfgqnfndngalgqss 174
QY 172 FLITGTSGDALFSNNSSTGGAIATAGARIANTGYVRFSLNIASSTGAIIDETS 231
Db 175 isls-lnpnltfaknkatqggalystggtitnntlnsasfsentaannggalyteassf 233
QY 232 LSNNKFLYFEGN---AAKTTGGAI-CNTKASGSPPELLISNNKTLIFASNVAETSGGAIHA 287
Db 234 issnkalsfinnsvtatsatcgalycstspkpvltisdngeinfignitaitsggalyt 293
QY 288 KKLALSSGGTETFLRN--VSSATPKGAISIDASGELSLSAETGNITFVRNTLTFT-TGST 345
Db 294 dnlvssggptlfknsgydaaplgaiadsgslsalgddifegntvvkgass 353
QY 346 DTPKRNAINTG-SNGKFTELRAKNHPTFFYDPTISGTS--SDVLKINNGSAGALNPYQ 402
Db 354 qtttrnsinlgnakivlraegngntiifydipittsitaalsdalnlnqpdlagnpayq 413
QY 403 GTILFSGTTLTADLKVADNLKVSFTOPVSLSGKLLQLQGVLESTFSQAGSLGMD 462
Db 414 gtlvifsgkiseaeaaadnktiqqpltagqlagqlsksgvtlvaksfsgspgstllmd 473
QY 463 SGTTLSTAGTITNLGINVDSLGLKQPSVLTAKGASNKVIVSGKLNLDIDEGNIYESH 522
Db 474 agttletadg-itlnnlvlnvdsiketkktllkatqsgvtltsigsislvdpsgnvyedv 532
QY 523 MFSDHQFLSLKIRTVADVTNVDISSLIPVPAEDPNSEYCFQCGQWNVNWTDTATATKE 582
Db 533 swnpnpqvfcsltl--adbpnahlitlaadpleknphwgyqgnwalswgedtatska 590

QY 583 ATATWTKTGFVSPERKSALVCNLTGCVFTDIRSLQOLVEIGATGMEHKOGFWVSSMTNF 642
Db 591 atltwtktgynpnperrgtlvanltlwgsvfadvrsigqlvatkvrsqetrgiwcgisnf 650
QY 643 LHTGTDNRKGRFRTSGYVIGGSAHTPKDOLFATFACHLFAKDCKCFIAHNNRTYGGT 702
Db 651 fhkdstkinkgrfhisagvyvgatttlasdnlttaacqifgkardhfinknrasayaas 710
QY 703 LFFKHSHTLQPNVLRGAKFSESAIEKFPREIPALDVQVFSHSDNRMETHYTSLPE 762
Db 711 lhlqlatlspsllry--lpgsses-----eqpvlfdaqisyiakntmkytdqapk 761
QY 763 SEGWSNECTAGGIGLDPFVLSNPHLEKTFIPQMVEMVYVSONSFSSSD-GRGFS 821
Db 762 geswyndgcalellasslphltalshelghfayfpfikveasylnqdsfkernttlvrsfd 821
QY 822 IGRLLNLISIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNPNQSTATVMSPDWKIRG 881
Db 822 sgdlinvspigltferfsrnerasyeatvlyadvyrkopdctallinntskwtgtgn 881
QY 882 LSROAFLLRGSNNVYNSNCELPGHYAMELGRSSRNTNVGVTKLRF 928
Db 882 lsrqagigragifyafspnlvtsnlsmeirgssrsynadlpgkfkf 928

RESULT 10
AAW88418
ID AAW88418 standard; Protein; 928 AA.
XX
AC AAW88418;
XX
DT 26-APR-1999 (first entry)
XX
DE Chlamydia pneumoniae surface exposed protein Omp5.
XX
KW Omp5; outer membrane protein 5; surface exposed protein; antigen;
KW infection; diagnosis; vaccine; atherosclerosis; asthma.
XX Chlamydia pneumoniae.
XX WO9858953-A2.
XX 30-DEC-1998.
XX
PF 19-JUN-1998; 98WO-DK00266.
XX
PR 23-JUN-1997; 97DK-0000744.
XX
PA (BIRK/) BIRKELUND S.
PA (CHRI/) CHRISTIANSEN G.
PI Birkelund S, Christiansen G, Knudsen K, Madsen A;
PI Mygind P;
XX WPI: 1999-105610/09.
DR N-PSDB; AAX06817.
XX
XX Species-specific test for identifying mammals infected with
PT Chlamydia pneumoniae - comprises detecting antibodies specific for
PT outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT these proteins
XX Claim 7; Page 43-45; 115pp; English.
XX
XX This polypeptide comprises the novel 97.2 kDa surface exposed
CC protein Omp5 of the human respiratory pathogen Chlamydia
CC pneumoniae. Its amino acid sequence was deduced from DNA (see
CC AAX06817) isolated from a C. pneumoniae expression library. The
CC invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC (see AAW88417-28), and nucleic acid sequences encoding them (see
CC AAX06816-27). A new species specific test is claimed that is used
CC to identify mammals (including humans) infected with Chlamydia

Db 119 lftgfnslfiaapgttvasgktslssagalnltndgtllsqvnsneannngaitak 178
 QY 171 SFLTGTSGDALFNSNSSTKGGAIATAGARIANNNGYVFLSNIASTSGAIDDECTS 230
 Db 179 tllsngtssltfcsnakklggaiaasaasigntgqlvfmnknkgetggaglfgeass 238
 QY 231 ILSNKKLYFEGNAKTT--GGAICNTKASGPELIIISNNKTLIFASNVAETSGGAHA 287
 Db 239 sitpnslffsgntatdaagkggaicyckgetptllisngktslfasnsvtgggaica 298
 QY 288 KKLALSSGGTFEFLRNNV-SNATPKGGAISIDAGELSLSAETGNITFVRNLTLTGSTD 346
 Db 299 hglldaagptlfamrcnctaadkggaialadsgslsnaangdltflgltst-sap 357
 QY 347 TPKRNAIGNSNGKFTFLRAAKNHTIFFYDPTISEG--SSDLKINNGSAGALNPYOGTI 405
 Db 358 tstrnalygssakltlnraagqgslyfplasnrtggsdvltnpdsnspdyegti 417
 QY 406 LFSGETLTADLKVADNLKSSFTQPSLSGKLLQLQGVLTLESTFSQAGSLGMDSGT 465
 Db 418 vfgsklisaadeaadtfsilkplalasgtialkgnvelvngftqegstllmcpgt 477
 QY 466 TLSTAGSIITNLGINVDSLGLKQPVSLTAKGASNVIVSGKLNLDIEGNIYESHMF 525
 Db 478 klkadteaistklivdlsalegnksvsetaganktltitplvfgdssgnfyeshi- 536
 QY 526 HDQLFSL-LKIVTDADVDNVDISSLPVPAEDPNSEYFGQGNVNWTTDTATNTKEAT 584
 Db 537 -nqafqplvvftaataasdiydaltltpvtpephgygghweatw-adtst-aksqt 593
 QY 585 ATWTKTGFVSPERKSLVNCNLGVTDRSLQOLVEIGATGMERKOGFWVSSMTNLFH 644
 Db 594 mtwvttygnppearasvvpdsllwasfdirtlqqimtsqansiyqgrglwasgtanffh 653
 QY 645 KTGDENKRGFRHTSGGVIGSAHTPKDDLFTFAFCHLFARDKCFIAHNNRTRYGTLF 704
 Db 654 kdksgtnqatrhkygyivvgasaedfsenfsvafclqfkdalfiventshnylasly 713
 QY 705 FKHSHTLQPNQLRGLAKSESIAEFPPREIPLALDVQVSFSHSDNRMETHYSLPSE 764
 Db 714 lqhrflg-----glmpsfsgsdtmldkdlpllnaqlsystkndmdtrycsypeaq 766
 QY 765 GWSNECIAGIGLIDLPVLSNPHLEKFTIPQMKVEMVYVSQSFSSDGRGFSTGR 824
 Db 767 gswtnnsgalelgsalylpkeapffggyfplkfayvyrqnfkesgaearafddgd 826
 QY 825 LLNLSPVGAKFVQGDIGDSTYDLSGFFSDYVRNPNQSTATILVSPDSKWKIRGNLSR 884
 Db 827 lvnscipvgirlekisedeknnfeislaiyigdvyrknprartslmvsgaswtscnklar 886
 QY 885 QAFLLRGSNNVYVNSNCLFCHYAMELRGSSRNNVDVGTKLRF 928
 Db 887 qafilasaghtlshphvelsgeaayelrgsahlynvdcglrysf 930

RESULT 12

AAV35054

ID AAV35054 standard; Protein; 927 AA.

XX AAV35054;

AC AAV35054;

XX 13-SEP-1999 (first entry)

XX Chlamydia pneumoniae surface exposed polypeptide.

XX Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis;
 KW sinusitis; purulent otitis media; erythema nodosum; pharyngitis;
 KW vaccine; neutralising epitope.

XX Chlamydia pneumoniae.
 OS WO9927105-A2.

XX

XX

XX

PD 03-JUN-1999.
 XX 20-NOV-1998; 98WO-IB01890.
 XX 04-NOV-1998; 98US-0107078.
 PR 21-NOV-1997; 97FR-0014673.
 XX (GEST) GENSET.
 XX Griffais R;
 PI WPI; 1999-357842/30.
 DR Genome sequence of Chlamydia pneumoniae
 XX Page 942-944; Disclosure; 1912pp; English.
 PS AAY34584-Y35879 represent the proteins encoded by all the open reading
 CC frames in the complete genome (see AAY9190) of Chlamydia pneumoniae.
 CC C. pneumoniae causes respiratory disease such as pneumonia and
 CC bronchitis and is thought to be a contributing factor in heart
 CC disease, sarcoidosis, sinusitis, purulent otitis media, erythema
 CC nodosum or pharyngitis. The polypeptides encoded by the open reading
 CC frames of the C. pneumoniae genome (see AAY34584-Y35879) can be used in
 CC immunogenic compositions as vaccines. Vectors containing C. pneumoniae
 CC nucleotide sequences can also be used as immunogenic compositions,
 CC especially where the vector directs the expression of a neutralising
 CC epitope of C. pneumoniae.
 XX Sequence 927 AA;
 SQ
 Query Match 36.8%; Score 1758.5; DB 20; Length 927;
 Best Local Similarity 42.0%; Pred. No. 3.le-110;
 Matches 398; Conservative 153; Mismatches 357; Indels 39; Gaps 17;
 QY 1 MKTSIPWLVSSVLAFSCHLQ---SLANEELLSPDOSFNIGNIDSGTFTP-----KTSAT 51
 Db 1 mkkslhflisslslalplslnfafaavveinlptnsfsg---pgtytppaqtnadgt 57
 QY 52 TYSITGDVFFPEKGPPLSDSCFKQTTDNLTFLNGHSLTFFGIDAGTHAGAAASTAN 111
 Db 58 iynltgdvsitnagstaltascfkettgnlsfghyqfllqnladaganc-tftntaan 116
 QY 112 KNTLFSGSLSPDSSSTVTTCGTLSSAGGVNLENIRKLVVAGNFSTADGGAIGAS 171
 Db 117 klisfsfyslsl--lqtnattgtgaikstgacidsynscysfqnfnndnggalsgss 174
 QY 172 FLRTGTSGDALFNSNSSTKGGAIATAGARIANNNGYVFLSNIASTSGAIDDECTSI 231
 Db 175 isls-lpnltfaknkatkqgalytggitntlnsaasfentaannngalyteassf 233
 QY 232 LSNKKFLYFEGN---AAKTYGGAI-CNTKASGPELIIISNNKTLIFASNVAETSGGAHA 287
 Db 234 issnkaisfnnsvtatsatggalycsstapkpvltsldngeinfignitaitsggalyt 293
 QY 288 KKLALSSGGTFEFLRNNV-SNATPKGGAISIDAGELSLSAETGNITFVRNLTLT-TGST 345
 Db 294 dnlvlsnggptlfnksaidtaeaplggaialadsgslsalsalgddifegntvvkgasss 353
 QY 346 DTPKRNAINIG-SNGKFTFLRAAKNHTIFFYDPTISECTS--SDVLKINNGSAGALNPYQ 402
 Db 354 qtttrnsingntnakivqlrasgntlyfydptittsaalsdalnngpdlagnpayq 413
 QY 403 GTILFSGETLTADLKVADNLKSSFTQPSLSGKLLQLQGVLTLESTFSQAGSLGMD 462
 Db 414 gtlvifsgkiseaeaaadnlkstiqqtltaggqlsksgvtlvaksfsgspgstllmd 473
 QY 463 SGTTLSLTAGSIITNLGINVDSLGLKQPVSLTAKGASNVIVSGKLNLDIEGNIYESH 522
 Db 474 agttletadsgsls--icsqcrflkrdqextlkatqasqvtlsgslslvdpnsgnyved 531
 QY 523 MFSHDQLFSLKITVDADVDNVDISSLPVPAEDPNSEYFGQGNVNWTTDTATNTKE 582

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Db 532 swnpqvfscitit--addpanihitdaadpleknpihwgygnwalswgedatksa 589
QY 583 ATATWTKTGVPSPERKSALVCTNLGVFTDIRSLQOLVEIGATGMEHKQGFVWSMTNF 642
Db 590 atltwtktgynperrgtlvantlwgsvfvdvrsigqlvatkrvqsetrgiwcgeisnf 649
QY 643 LHKGTGDNKRGFRHTSGGYVIGGSAHTPKDDLETFACHLFARDKDCFTAHNNRSRTYGGT 702
Db 650 fhkdstkingfhisagvyvgattlasdnllitaafclfgkdrdhfinknrasyaas 709
QY 703 LFFKHSHTLOPNYLGRKAFSESAIEKPPREIPALDVQVFSHSDNRMEPHYTSLPE 762
Db 710 lhlqhatlssplly--lpgses-----eqpvlfaqaqsiyyskntmkytqapk 760
QY 763 SEGWSNECTAGIGLIDLPVLNPHPLKFTFIPQMKVEMVYVQNSFFESSD-CRGFS 821
Db 761 gesswyndgcalslphalsheglfhayfpfikveasyihqdsfernttlvrfd 820
QY 822 IGRLLNLSIPVGAQFVQGDIGDSTYDLSGFFVYSDVYRNNPQSTATLVMSPDWSKIRGGN 881
Db 821 sgdlinvspiglitferfsrnerasyeatviyvdryrknpcdtallinntskttgn 880
QY 882 LSRQAFLLRGSNNYVNSNCELFGHAMELRGSRNNYVNDVGTKLRF 928
Db 881 lsrqagigragifayfapnlevtlnslmeirgsrsynadlgkgfgf 927

RESULT 13
AA902037
ID AA902037 standard; Protein; 928 AA.
XX
AC AA902037;
XX
DT 29-AUG-2000 (first entry)
XX
DE Chlamydia antigen CPN100635.
XX
KW Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW therapy; upper respiratory tract disease; bronchitis; sinusitis;
KW asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.
XX
OS Chlamydia pneumoniae.
XX
FH Key
FH Peptide 1..43
FH /note= "signal peptide"
FT Protein 44..928
FT /note= "mature CPN100635"
XX
PN WO200032794-A2.
XX
PD 08-JUN-2000.
XX
PF 01-DEC-1999; 99WO-CA01147.
XX
PR 01-DEC-1998; 98US-0110339.
XX
PR 01-DEC-1998; 98US-0110340.
XX
PR 01-DEC-1998; 98US-0110427.
XX
PR 01-DEC-1998; 98US-0110428.
XX
PR 01-DEC-1998; 98US-0110438.
XX
PA (CONN-) CONNAUGHT LAB LTD.
XX
PI Murdin AD, Oomen RP, Wang J;
XX
DR WPI; 2000-412339/35.
XX
DR N-PSDB; AAA30849, AAA30850.
XX
PT Nucleic acids encoding polypeptide antigens from Chlamydia useful for
PT preventing, diagnosing and treating diseases such as community acquired
PT pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
PT asthma.
```

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XX
PS
CC Claim 16; Fig 3; 174pp; English.
CC
CC This sequence is a Chlamydia antigen of the invention, designated
CC CPN100635. The nucleic acids (and their complementary sequences) may be
CC used as diagnostic agents for detecting the presence of nucleic acids
CC encoding Chlamydia antigens in samples according to standard methods,
CC and therefore, for diagnosing Chlamydia infections. For example, they may
CC be used as primers and probes for diagnostic polymerase chain reaction
CC (PCR) assays. Antisense sequences may be used to down regulate
CC expression of the proteins and may be used to treat infections. The
CC nucleic acids may also be used to produce the protein antigens they
CC encode according to standard recombinant DNA methodologies. The
CC proteins may then be used as antigens for the production of antibodies
CC (i.e. as vaccines) for preventing infection by Chlamydia. The
CC antibodies may also be used as diagnostic reagents for detecting
CC infections. Chlamydia is a pathogen implicated in the development of
CC (for example) community acquired pneumonia, upper respiratory tract
CC disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC adult-onset asthma and acute exacerbations of asthma in adults.
XX
SQ Sequence 928 AA;
XX
Query Match 36.7%; Score 1757; DB 21; Length 928;
Best Local Similarity 39.9%; Pred. No. 4e-110;
Matches 381; Conservative 174; Mismatches 347; Indels 52; Gaps 18;
QY 1 MKTSPVWLVSVLA--FSCHLQSLANEELLSPDDSFNGNIDSGTTPKTSAT--TYSLT 56
Db 1 mksqfswlvsatlactscstvfafaenigpsdsfdstgtgtpknttldytlit 60
QY 57 GGVFFYEPGKGPLSDSCFKQTTDNLTLFLNGHSLTFGFDAGTHAGAAAATANKNLFF 116
Db 61 gditlqldsaaltkgcfdsdttsslsfagkyslfnlkssae-gaalsvttdknlsl 119
QY 117 SGFSLLSFDSPSTVTT--GQGTLSAGGVNLENTRKLVAGNFSTAGGAIKGASFL 174
Db 120 tgfssltflaapssvittpgsgavkcgldtfdngltlfdkqdyceenggaistknlsl 179
QY 175 TGTSGDALFSNNSSST--KGAIAITAGARIANNYGVYRFLSNIASTGGATDDGTSI 231
Db 180 knstgsisfegnksatgkkgalcatgtvdtntnncaptlfnnniaaaggaglnscgn 239
QY 232 LSNKFLYFEGNAAKTT--GGAICNTKASGPPELLISNNKTLIFASNVAEISGGAHAK 288
Db 240 itgntslvfensvtatagngal-----sgdadvtsngqvsvtfsngqavangaiyak 294
QY 289 KIALSS--GGTFEFLNNVSSATP-KGGAISIDASGELSLSAETGNITFVRNPLTTTGST 345
Db 295 kitlasgggggnpfsnnivggttagnggaisilaagecslfseagdhynghaivat-lp 353
QY 346 DTPKRNAINIGSNGKFTELRAAKNHTIFFYDPTTSE--GTSSDVLKINNGSAGALNPYOG 403
Db 354 qttkrnsidigstgkdhelraisghsiffydpitanaadstdtlnlnkadagnstdysg 413
QY 404 TILFSGETLTADLVADNLKSSFTOPVSLSGKLLKQGVLETSFSQEGAGSLGMD 463
Db 414 sivfsgekisedeakvadnltlkgpvtlagnlvkrgvltldtkgftqtagssvmda 473
QY 464 GTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIIDEGNIYESHM 523
Db 474 gtlkasteevltlgisipvdsilgeqkvviaasaasknvalsgpilllindngnayenh 533
QY 524 FSHDQLFSLLLKITVDADVTNVDISSLIPVPAEDPNSEYGFQOGOWNVNTTDTAT--NTK 581
Db 534 lgtqdfsvqlsa-lgtatttdvpa---vptvatpthygggtgwtvddtastcpkck 589
QY 582 EXATAWTKTGFPSPERKSALVCTNLGVFTDIRSLQOLVEIGATGMEHKQGFVWSMTNF 641
Db 590 tatlawtntgylnpergqplvpnsllwgsfslqaiqgviersaltlcsdrfwaagvan 649
QY 642 FLHKTGDNKRGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIANNNSITYGG 701
```


Db 887 qafilasagshltlshpvelsgeaayelrgsahlynvdcglyrsf 930

RESULT 15

AA90240

ID AAY90240 standard; Protein; 930 AA.

AC AAY90240;

XX 29-AUG-2000 (first entry)

XX Chlamydia antigen CPN100639.

XX Chlamydia antigen; diagnosis: infection; community acquired pneumonia;
 KW therapy; upper respiratory tract disease; bronchitis; sinusitis;
 KW asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.

XX Chlamydia pneumoniae.

OS WO200032794-A2.

PN 08-JUN-2000.

XX 01-DEC-1999; 99WO-CA01147.

PR 01-DEC-1998; 98US-0110339.

PR 01-DEC-1998; 98US-0110340.

PR 01-DEC-1998; 98US-0110427.

PR 01-DEC-1998; 98US-0110428.

PR 01-DEC-1998; 98US-0110438.

XX (CONN-) CONNAUGHT LAB LTD.

XX Murdin AD, Oomen RP, Wang J;

XX WPI; 2000-412339/35.

DR N-PSDB; AAA30853, AAA30854.

XX Nucleic acids encoding polypeptide antigens from Chlamydia useful for
 PT preventing, diagnosing and treating diseases such as community acquired
 PT pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
 PT asthma -

XX Claim 16; Fig 7; 174pp; English.

XX This sequence is a Chlamydia antigen of the invention, designated
 CC CPN100639. The nucleic acids (and their complementary sequences) may be
 CC used as diagnostic agents for detecting the presence of nucleic acids
 CC encoding Chlamydia antigens in samples according to standard methods,
 CC and therefore, for diagnosing Chlamydia infections. For example, they may
 CC be used as primers and probes for diagnostic polymerase chain reaction
 CC (PCR) assays. Antisense sequences may be used to down regulate
 CC expression of the proteins and may be used to treat infections. The
 CC nucleic acids may also be used to produce the protein antigens they
 CC encode according to standard recombinant DNA methodologies. The
 CC proteins may then be used as antigens for the production of antibodies
 CC (i.e. as vaccines) for preventing infection by Chlamydia. The
 CC antibodies may also be used as diagnostic reagents for detecting
 CC infections. Chlamydia is a pathogen implicated in the development of
 CC (for example) community acquired pneumonia, upper respiratory tract
 CC disease (especially bronchitis and sinusitis, asthmatic bronchitis,
 CC adult-onset asthma and acute exacerbations of asthma in adults.

XX Sequence 930 AA;

Search completed: October 2, 2001, 03:26:04
 Job time: 30196 sec

Query Match 36.7%; Score 1755; DB 21; Length 930;

Best Local Similarity 41.6%; Pred. No. 5.4e-110;

Matches 393; Conservative 165; Mismatches 356; Indels 30; Gaps 14;

QY 1 MKTISFWLVSSVLAESCHLOSAN---EELSPDDSFNGNIDSGTFTPKTSA----TTY 53

DB 1 mkiphkllisltvtpi-llsiatygdasisptdsfdg-aggstftpkstadangtny 58

QY 54 SLTGDFVFFEPGKGTPLSDSCFKQTTDLNLTFLGNGHSLTFGFDAGTHAGAAATANKN 113
 Db 59 visgnvinyadagkaltcccttetgdtftgkygsfnftvtdagstnagaaatcadka 118
 QY 114 LTFSGFLLSFDSPSTVTQCTLTSSAGGVNLENIRKLVVAGNFSTA--DGGAIKA 170
 Db 119 liftgfnlsfiaapgttvasgkstlssagalnldngtilfsgnvsneannngaittk 178
 QY 171 SFLLTSGDALFSNNSSSTKGAATATTAGARIANNWGYVRFSLNSTASTSGGAIDEGTS 230
 Db 179 tllsgntssltftsnsakklgalyssaaaisgntgqlvfmnnkgetggaglfgeass 238
 QY 231 ILSNNKFLYFEGNAKTT--GGAICNTKASGPELIIISNNKTLIFASNVAETSGGAIHA 287
 Db 239 slatqssllfsfntdaagkgalycektgetptltisgnksltfaensvtqggalica 298
 QY 288 KKLALSSGGTFEFLRNNV--SSATPKGGAISIDASGELSLSAETGNITFYRNTLTITGSTD 346
 Db 299 hglidisaagptlfsnnrcgntaagkggaialadsgslsianqgdditflgntltst-sap 357
 QY 347 TPKRNAINSGNGKFTELRAAKNHITFFYDPTSEGT--SSDVLKINNGSAGALNPYQGTI 405
 Db 358 tstrnailygssakitnraacgqsiyfydplasnttgasdvltinqpdsnspdysgti 417
 QY 406 LFSGETLTADLKVADNLKSSFTQPVLSGGKLLLOKGVTLTLESTFSOBAGSLGMDSGT 465
 Db 418 vfsgeklisadeakaadnftslkqplalasgtlaikgnvelvngftqtegtllmqpgt 477
 QY 466 TLSTTAGSITITNLGINVDLSGLKQPVSLTAKGASNKVIVSGKLNLDIEGNIYESHMS 525
 Db 478 kikadteaalsltklvldlsalegnksvsietagantitltplvfqdsngnfyeshti- 536
 QY 526 HDQLFSL-LKITVDADVDTNVDISSLIPIPAEDPNSEYFGQGMVNVNWTDTATNTKEAT 584
 Db 537 -nqafqplvvftaataasdiydaltltsptvpephygyqghweatw-adtst-aksqt 593
 QY 585 AWWTGTGFPVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFVWSSMTNFLH 644
 Db 594 mtwtvgynpnerrasvvpdsilwasftdirtlqimtsqansiyyqgrlwasgtanfh 653
 QY 645 KTGDENRKGRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKCFIAHNNRTRYGGTILF 704
 Db 654 kdksgtnqafhrkxygyivggaaedfsenifsvafqqlfgkdkdlfiventshnylasy 713
 QY 705 FKHSHTLOPQNYLRLGRKFSESAIEKFPPEIPLALDVQVFSHSDNRMETHVTSLEPSE 764
 Db 714 lqhraflg-----glmpsfsgsldmldkpllnaqlsystkndmdtrtystypseq 766
 QY 765 GWSNNECIAAGIGGLDLPFFVLSNPHPLFKTFIPQMKVEMYVYVQNSFFSSSDGRGFSIGR 824
 Db 767 gwttnnsgalelggsllalylpeapffqyfpflkfqavysqqnfkesgaeaaraiddgd 826
 QY 825 LNLSTIPVGAQFVQGDIGSYDYDLSGFFVSDVYRNNPOSTATLVMSPDSPSKIRGNLSR 884
 Db 827 lvnscipvrlrlekisedeknnfseilaylgydvyrknprsrtslmwsgaswtslcknlar 886
 QY 885 QAFLLRGSNNYVNSNCELFGHYAMELGRSSRNNYVNDVGTKLRF 928
 Db 887 qafilasagshltlshpvelsgeaayelrgsahlynvdcglyrsf 930